STATINTL [redacted]

ECP NO. 1, 2, 3 and 4
Job No. [redacted] STATINTL
24 May 1967

BASIS FOR ESTIMATE - MAGAZINE INTERFACE

1.0 The Chip Format Printer is designed to operate in conjunction with an automatic processor designed and manufactured by [redacted] STATINTL [redacted] STATINTL The common link between the two units is a [redacted]. manufactured processing magazine that has a 36 chip (in [redacted] chip holders) capacity, STATINTL that is automatically loaded by the Chip Format Printer and automatically unloaded by the Processor. At present, there are in existence 4 customer furnished processing magazines, 1 manual holder insert and extractor mechanism, approximately 200 chip holders, and a teletype machine.

2.0 The attached estimate (see ECP 1 for cost breakdown) includes charges incurred in the diagnosing and debugging the CFE Processing Magazine and [redacted] STATINTL Chip Format Printer interface during the period between 15 February 1967 and 5 March 1967 as documented in [redacted] STATINTL Laboratory Record Book No. 2018. The following three paragraphs are a summary of the recorded activities.

2.1 February 15 - 18

A) Ran a series of tests trying to load CFE holders into processing magazine [redacted] STATINTL

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During this period two types of failure continually occurred.

1. CFE Chip Holders would not align properly in Magazine, causing loading failures.

2. Previously loaded holders would tip over in Magazine, causing insert failure.

B) Attempted electrical and mechanical adjustments to overcome these failures.

1. Changed trigger solenoid release delay time by changing capacitors.

2. Changed trigger stroke by adjusting mechanism.

3. Changed capacitor and discharge resistor across loading solenoid to eliminate tipping of holders.

4. Readjusted and cushioned loading arms.

C) Random failures that occurred during these tests.

1. Stalling of Transport Drive (defective Chip Holder).

2. Stalling of Loading Mechanism because of excessive drag of already loaded holders.

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D) Damage to mechanism incurred during above tests (caused suspension of tests).

1. Loading trigger bent so badly it had to be fabricated (due to loading into jammed stack).
2. Ball bearing in trigger assembly damaged.
3. Transport arms damaged.

2.2 February 14 - March 2

1. Designed and added breadboard changes to STATINTL [redacted] Processing Magazine.
2. Repaired Transport Arms.
3. Refabricated, disassembled and reassembled Trigger and Trigger mechanism, and replaced damaged ball bearing.

2.3 March 3 - 5

Ran series of tests after retiming and realigning transport and insert mechanisms, which were successful.

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3.0 The attached estimate is based upon remedying the following difficulties.

3.1 The method of chip holder removal by the Processor is not compatible with the orientation of the chip holder in the processing magazine as inserted by the Chip Format Printer.

3.2 The processing magazines are not uniform in the banking area; i.e., the portion of the processor magazines that mate with the Chip Format Printer Print Magazine vary in squareness, banking dimensions and loading gate location.

3.3 The chip holders are not uniform in length and do not have all their component pieces coplaner. Excessive deviation in these two areas causes magazine loading and unloading malfunctions.

3.4 Excessive play in the processor magazine platen guides and erratic operation of the platen tensioning mechanism (garter spring sliding over a pulley) allows the platen to tilt or lose contact with the holder stack or both, during the automatic chip holder loading. This allows the holder stack to fall or cock causing a maga-

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zine jam. The above internal magazine characteristics will also cause unloading malfunctions if a partially filled magazine is mishandled (i.e., turned upside down or shaken along its long axis). — (ECP-4) For Cost

ILLEGIB [redacted]

4.0 The attached estimate (See ECP 4) will include the following: -

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4.1 Processing Magazines (4 units) - The 4 processing magazines will be reworked to achieve uniformity in the banking and loading areas. A platen assembly will be designed, fabricated and installed to eliminate platen tilt and erratic motion during automatic loading. The magazine keying arrangement will be relocated to allow compatible operation of the Chip Format Printer and the Processor. Layouts, detail drawings, assembly drawings and parts lists of the areas that are reworked will be provided.

4.2 Print Magazine, Chip Format Printer - The Print Magazine banking and locking areas will be redesigned and reworked to be compatible with the altered processing magazine.

4.3 Chip Holders (~~200~~ 400 units - approximately) - All holders will be inspected for conformance of critical dimensions. All salvage-

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able holders will be reworked to conformance. A detailed Specification Control Drawing will be provided.

4.4 Manual Insert and Eject Mechanism (1 unit) - The insert mechanism will be redesigned and reworked to make the unit compatible with the 4 reworked processing magazines. Layouts assembly drawings, detail drawings and parts lists of the redesigned areas will be provided.

5.0 General

5.1 Rework of the chip holders will not make STATINTL [redacted] responsible for overall development quality.

5.2 Rework of the two magazines not in STATINTL [redacted] possession assumes that they are similar in internal design to the two in STATINTL [redacted] possession.

5.3 The attached estimate does not include cosmetic repairs; i.e., repair of chipped nylon corners, chipped paint, etc.

5.4 The redesign of the internal mechanism of the processor magazine will not eliminate the cocking of individual chip holders should a partially filled magazine be mishandled.

5.5 The redesign of the internal mechanism of the processing magazine will reduce the processing magazine to 34 or 35 chip holders.

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6. BASIS FOR ESTIMATE - TELETYPE UNIT (See ECP-3 For Cost

ECP II

The Chip Format Printer is a digitally controlled device. Digital inputs to the unit is via a GFE Teletype unit, Model ASR 35.

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The following difficulties were encountered with the Teletype unit.

1. A misplaced internal jumper caused lockout of certain Teletype functions. This made it necessary to "jerry rig" circuits circumventing these lockouts so that debugging of the Chip Format Printer could proceed.

2. Lack of a pulse to flag the reading of a word by the tape reader made it necessary to locate, shape and radio noise a suitable solenoid pulse to serve the function.

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